

1 **WHAT IS CLAIMED IS:**

2 1. A blast-resistant cargo container comprising: /

3 multiple side panels which are able to be assembled to form a chamber of the
4 container, at least one of said panels is of high tensile strength, at least one of which
5 span-thickness ratio is greater than 50; and

6 multiple connecting members which are able to transmit tensile forces directly or
7 indirectly between every two adjacent side panels and that either one or both ends of each
8 said connecting members can rotate the member itself like a hinge when a blast occurs, at
9 least one plastically stretched connecting member with curve cross section of said
10 connecting members is securely mounted between two adjacent said side panels and is able
11 to be plastically stretched to near a straight cross section under a blast,

12 whereby the structure formed by said side panels and said connecting members has
13 sufficient stiffness under normal operations and is a flexible structure deformed to near a
14 sphere and being able to confine an explosive blast in the structure under a blast.

15 2. The blast-resistant cargo container as claimed in claim 1, wherein the
16 connecting members are not securely connected each other at the corners where the
17 connecting members intersect.

18 3. The blast-resistant cargo container as claimed in claim 1, wherein each of said
19 plastically stretched connecting members is either two layer or single layer connecting
20 member and connected to said adjacent side panels with overlap.

21 4. The blast-resistant cargo container as claimed in claim 1, wherein the plastically
22 stretched connecting member has an arcuate cross-section.

23 5. The blast-resistant cargo container as claimed in claim 3, wherein at least one
24 layer of said two layer connecting member has an arcuate cross-section constituted by line

1 segments.

2 6. The blast-resistant cargo container as claimed in claim 1, wherein the plastically
3 stretched connecting member has a bubble-shaped cross-section.

4 7. The blast-resistant cargo container as claimed in claim 3, wherein at least one
5 layer of the two layer connecting member has a crinkled cross-section.

6 8. The blast-resistant cargo container as claimed in claim 3, wherein at least one
7 spacer is disposed between the two layers of said two layer connecting member in order to
8 reinforce their bending stiffness when the whole cargo container is too flexible to be
9 operated as normal.

10 9. The blast-resistant cargo container as claimed in claim 1, wherein a cap is
11 mounted at each corner of the container and securely connected to only one of its
12 surrounding said side panels.

13 10. The blast-resistant cargo container as claimed in claim 1, wherein said
14 plastically stretched connecting member is made of a ductile material.

15 11. The connecting members as claimed in claim 10, wherein the ductile material
16 is selected from a group of metals consisting of stainless steel and high ductility aluminum
17 alloy.

18 12. The blast-resistant cargo container as claimed in claim 1, wherein said side
19 panel of high tensile strength is selected from a group of plates consisting of fiber-
20 reinforced composite, laminated composite, metal laminated composite and high strength
21 aluminum alloy plates.

22 13. The blast-resistant cargo container as claimed in claim 1, wherein the
23 plastically stretched connecting member is manufactured by either sheet-metal bending or
24 extrusion.

1 14. The blast-resistant cargo container as claimed in claim 1, wherein span-
2 thickness ratios of said side panels are greater than 200 for the side panels being made of a
3 brittle material.

4 15. A blast-resistant cargo container comprising: ✓
5 multiple side panels which include a bottom panel and are able to be assembled to
6 form a chamber of the container, at least one of said panels is of high tensile strength, at
7 least one of which span-thickness ratio is greater than 50;

8 at least one perimeter bar which is securely mounted around said bottom panel and
9 has a groove defined therein;

10 multiple connecting members which are able to transmit tensile forces directly or
11 indirectly between every two adjacent side panels and that either one or both ends of each
12 said connecting members can rotate the member itself like a hinge when a blast occurs;

13 at least one plastically stretched connecting member with curve cross section of
14 said connecting members is securely mounted between two adjacent said side panels and is
15 able to be plastically stretched to near a straight cross section under a blast; and

16 at least one L-shaped connecting member of said connecting members which has a
17 lower end formed as a L-shaped flange to be received in said groove of said perimeter bar
18 and is securely mounted to the adjacent side panel of said bottom panel on its upper end,
19 wherein the upper end of said L-shaped connecting member is able to rotate to said
20 perimeter bar greatly and these L-shaped connecting members are able to transmit tensile
21 forces between said bottom panel and its adjacent side panels through said perimeter bars
22 when a blast occurs,

23 whereby the structure formed by said side panels and said connecting members has
24 sufficient stiffness under normal operations and is a flexible structure deformed to near a

1 sphere and being able to confine an explosive blast in the structure under a blast.

2 16. The blast-resistant cargo container as claimed in claim 15, wherein said
3 perimeter bars are extruded bars.

4 17. The blast-resistant cargo container as claimed in claim 15, wherein said side
5 panel of high tensile strength is selected from a group of plates consisting of fiber-
6 reinforced composite, laminated composite, metal laminated composite and high strength
7 aluminum alloy plates.

8 18. The blast-resistant cargo container as claimed in claim 15, wherein the
9 plastically stretched connecting member and L-shaped connecting member are made of
10 ductile materials.

11 19. The connecting members as claimed in claim 18, wherein the ductile material
12 is selected from a group of metals consisting of stainless steel and high ductility aluminum
13 alloy.

14 20. The blast-resistant cargo container as claimed in claim 15, wherein a cap is
15 mounted at each corner of the container and it is securely connected to only one of its
16 surrounding said side panels.

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